

(12) **UK Patent Application** (19) **GB** (11) **2 381 048** (13) **A**

(43) Date of Printing by UK Office 23.04.2003

(21) Application No **0229414.8**

(22) Date of Filing **20.06.2001**

(30) Priority Data

(31) **0015207**

(32) **21.06.2000**

(33) **GB**

(86) International Application Data

PCT/GB2001/002753 En 20.06.2001

(87) International Publication Data

WO2002/001036 En 03.01.2002

(71) Applicant(s)

**Neyfor-Weir Limited
(Incorporated in the United Kingdom)
Bellevue Road, Clackmannan, Fife,
FK10 1NR, United Kingdom**

(72) Inventor(s)

**Andrew Downie
Guido Ernesto Pezzani
Edward Docherty Scott**

(51) INT CL⁷

**E21B 4/02, F01D 5/02 9/04 11/18 15/00, F03B 3/04
3/12 3/16 13/02**

(52) UK CL (Edition V)

**F1V VB VCF VCQ V106 V108 V111 V202 V204 V214
V308 V310**

**F1T TA TC T102 T109 T119 T129 T131 T149 T202 T302
T311**

U1S S1248 S1987

(56) Documents Cited by ISA

US 4850818 A

US 4832573 A

US 4114702 A

(58) Field of Search by ISA

INT CL⁷ E21B, F01D, F03B, F04D, F16D

Other:

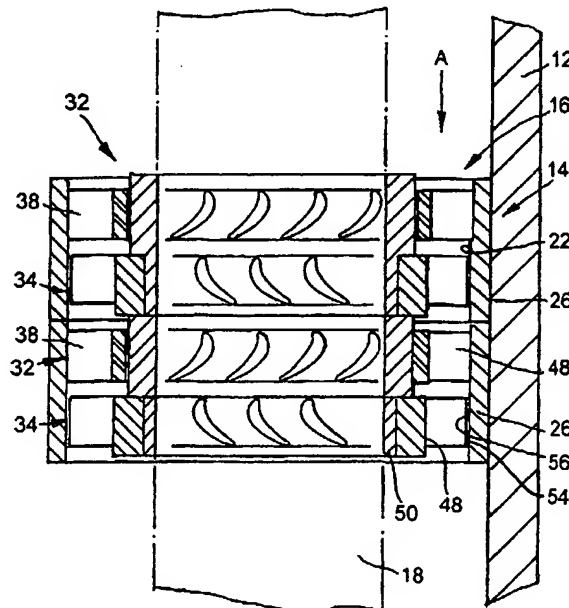
(74) Agent and/or Address for Service

**Cruikshank & Fairweather
19 Royal Exchange Square, GLASGOW,
G1 3AE, United Kingdom**

(54) Abstract Title

Drilling turbine

(57) A turbine (10) is disclosed which includes a turbine blade housing (14) having an inner facing portion (22) of a first material having a first coefficient of expansion, and a turbine blade body (16) having an outer facing portion (24) of a second coefficient of expansion greater than said first coefficient. In a preferred embodiment, the blade housing (14) comprises a number of steel shroud rings (26) and the turbine blade body (16) comprises a number of stators (32) and rotors (34) of a thermoplastic material. An interference fit between stator blades (38) and the shroud rings (26) is enhanced in use due to the difference in thermal and/or hydrophilic coefficients of expansion of the first and second materials.



GB 2 381 048 A